



The influence of ecological green villages project on ecosystem services

Wijesinghe I.C.S.¹; Chandrasekara C.M.K.N.K.²

Abstract

Increasing the population in developing countries will increase the demand for food. The human population has changed ecosystems more rapidly and extensively than in any comparable period in human history, to meet rapidly increasing demands for food, fresh water, and fuel. To meet the challenges of demand for food, enhancing agricultural productivity is essential. Therefore, the usage of chemical fertilizers was increased. Sri Lanka is identified as one of the nations with higher consumption of chemical fertilizers among the South Asian countries. Chemical fertilizers dramatically deteriorate the quality of food, water, soil and air of the particular environment. As a remedy to those problems ecological green villages program was introduced by the department of export agriculture of Sri Lanka in 2017, to promote the concept of organic agriculture. At present, there are about 15 green villages in Sri Lanka. One such program is being implemented in the Kurunegala district as the “Indulgodakanda organic crops village” with 41 farmers. The recommendation of the organic certificate is given only for their organic lands. Their other lands which are not belonging to the project are cultivated with chemical fertilizers. The present study aimed compares the impact to ecosystem services by considering the land belongs to the eco-green village of Indulgodakanda and chemical agriculture land not belonging to the project. The Shannon diversity index and the scale of diversity index were used to achieve the aim. Thereby the diversity of crop species at the beginning of the project in 2017 and two years after the commencement of the project in 2019 were compared. During the commencement of the project, there was a high Shannon diversity index value for 26 chemically cultivated lands out of 41 lands. However, 2 years later the Shannon diversity index values were increased in 33 organic lands. The highest diversity value of the organic agriculture land was 2.06 while the same chemical agriculture land reveals 1.75. After 2 years alpha diversity of the organic lands were increased up to 10 and 7. However, the beta value was used to study the diversity of crops between organically and chemically cultivated lands. According to the above results, this project helped to increase the diversity in organic lands than the chemically cultivated lands.

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¹Department of Geography, Faculty of Art, University of Colombo, Sri Lanka. (lakmalifonseka79@gmail.com)

²Department of Geography, Faculty of Art, University of Colombo, Sri Lanka. (saseekaw@gmail.com)